

- B¹
- b) an electric drive motor and motor control circuitry positioned remotely from the means for injecting to be substantially non-reactive with an electromagnetic field of the imaging apparatus; [and]
 - c) a non-rigid drive connection between the electric drive motor and the means for injecting comprising a flexible drive shaft; and
 - d) at least one battery for powering the motor control circuitry and the electric drive motor and for minimizing electromagnetic interference with the magnetic resonance imaging apparatus.
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7. (Amended) The patient infusion control apparatus of claim 1[, further comprising] wherein the at least one battery comprises a rechargeable battery [whercin the electric drive motor receives power from the rechargeable battery].

8. (Amended) A patient infusion system for use with a magnetic resonance imaging system, the patient infusion system comprising:

- a) a room shielded from electromagnetic interference;
- b) a system controller located externally of the shielded room,
- c) a patient infusion apparatus including infusion apparatus control means for controlling an infusion operation, the patient infusion apparatus located within the shielded room; and
- d) a fiber optic communications control link between the system controller and the infusion apparatus control means.

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Sub C¹ →
9. (Amended) A patient infusion system for use with a magnetic resonance imaging system, the patient infusion system comprising:

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- a) a room shielded from electromagnetic interference, which includes a viewing window;
 - b) a system controller external to the shielded room;
 - c) a patient infusion apparatus within the shielded room and including infusion apparatus control means for controlling an infusion operation; and
 - d) a communicating control link between the system controller and the infusion apparatus control means.
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Sub C² →
13. (Amended) A patient infusion system for use with a magnetic resonance imaging system to generate images of a patient, the patient infusion system comprising:

- B³
- a) a room shielded from electromagnetic interference by an electromagnetic shield including a viewing window;
 - b) a system controller located outside the room;
 - c) a patient infusion apparatus located inside the room including infusion apparatus control means for controlling an infusion operation;
 - d) a communications control link between the system controller and the infusion apparatus control means; and
 - e) an electric drive motor and motor control circuitry separated from the patient infusion apparatus and a non-rigid drive connection between the electric drive

B³ C F
motor and the patient infusion apparatus whereby the motor is positioned to be substantially non-reactive with an electromagnetic field of the imaging system.

22. (Amended) A method of patient infusion for use with a magnetic resonance imaging system, the method comprising the steps of:

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- a) providing patient infusion apparatus having a patient infusion apparatus controller and means operable to inject fluid into a patient;
 - b) positioning the patient infusion apparatus controller away from the patient infusion apparatus to prevent interference in the image, the infusion apparatus controller including at least one electric motor and motor control circuitry, at least one battery for powering the motor control circuitry and the at least one motor and for minimizing electromagnetic interference with the magnetic resonance imaging system and the motor control circuitry; and
 - c) operably connecting the electric motor for controlling the patient infusion apparatus to the patient infusion apparatus with a non-rigid drive connection, the electric motor operating the patient infusion apparatus to infuse media into a patient.

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24. A patient infusion system for use with a magnetic resonance imaging system, the patient infusion system comprising:

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an infusion apparatus positioned within a room shielded from electromagnetic interference, the infusion apparatus comprising an injector adapted to accommodate at least two syringes mounted thereon for injecting fluid into a patient during a magnetic

B5 I resonance imaging procedure, the at least two syringes operably engaged with at least one drive mechanism of the injector; and
a system controller positioned external to the shielded room and in communication with the infusion apparatus for controlling the operation thereof.

sub C3
B6 32. A patient infusion system for use with a magnetic resonance imaging system, the patient infusion system comprising:
an infusion apparatus positioned within a room shielded from electromagnetic interference, the infusion apparatus comprising an injector for injecting fluid into a patient during a magnetic resonance imaging procedure and a control unit comprising at least one battery for powering control circuitry and a drive mechanism of the injector and for minimizing electromagnetic interference with the magnetic resonance imaging system; and
a system controller positioned external to the shielded room and in communication with the infusion apparatus for controlling the operation thereof.
 33. The patient infusion system of claim 32 wherein the at least one battery is rechargeable.

B7 I *37* *40* A method of infusing a patient with fluid during a magnetic resonance imaging procedure, the method comprising the following steps:
providing an injector adapted to accommodate at least two syringes mounted thereon for injecting fluid into a patient during a magnetic resonance imaging procedure.

B⁷ I the at least two syringes operably engaged with at least one drive mechanism of the injector, the injector positioned adjacent to the patient within a room shielded from electromagnetic interference;

injecting fluid contained within the at least two syringes into the patient; and
generating magnetic resonance images of the patient.

B⁸ 44. A method of patient infusion for use with a magnetic resonance imaging system, the method comprising the following steps:

providing an infusion apparatus positioned within a room shielded from electromagnetic interference, the infusion apparatus comprising an injector for injecting fluid into patients during magnetic resonance imaging procedures and at least one battery for powering control circuitry and a drive mechanism of the injector and for minimizing electromagnetic interference with the magnetic resonance imaging system;

energizing the injector to inject fluid into one or more patients until the charge of the battery is substantially depleted; and

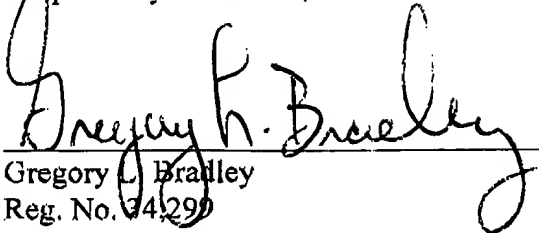
replacing the substantially depleted battery with a charged battery to energize the injector.

45. The method of claim 44, further comprising the following step:

providing a system controller positioned external to the shielded room and in communication with the infusion apparatus for controlling the operation thereof, the system controller comprising a battery charger for charging batteries substantially depleted of charge by the injector.

Respectfully submitted,

Dated: December 18, 1998


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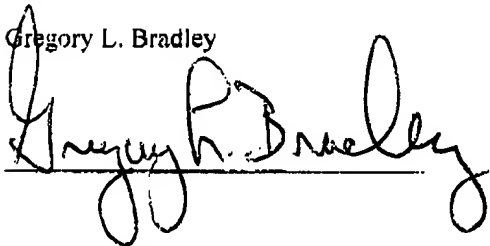
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89330/reissue/97-003/SuppAmd